



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,977	01/31/2002	Carlos Alonso	I12-0014US	2829
29855	7590	12/09/2005	EXAMINER	
WONG, CABELLO, LUTSCH, RUTHERFORD & BRUCCULERI, P.C. 20333 SH 249 SUITE 600 HOUSTON, TX 77070			SOL, ANTHONY M	
			ART UNIT	PAPER NUMBER
			2662	
DATE MAILED: 12/09/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/062,977	ALONSO ET AL.
	Examiner	Art Unit
	Anthony Sol	2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 31 January 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 25 and 26 is/are allowed.
- 6) Claim(s) 1,5,6,8-12,16,18,19,24,27,31,32,36,37 and 39 is/are rejected.
- 7) Claim(s) 2-4,7,13-15,17,20-23,28-30,33-35 and 38 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 31 January 2002 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8, 18, and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8, 18, and 39 recite the limitation "said interconnection link" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1, 5-6, 9-12, 16, 19, 24, 27, 31, 32, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,944,152 B1 ("Heil").

Regarding claim 1,

Heil shows in Fig. 3, a RAID server 134 connected to storage servers 130 and 132 and a shared-bus-to-switched-fabric bridge 150 (first interface and second interface) to link the shared bus 146 to the switched fabrics 138 and 140 (col. 7, lines

35-37, 52-56). Heil discloses that a communication channel is established for the transfer of message packets containing data access requests (transmit and receive management data) between host device and the storage devices (col. 6, lines 7-9). Heil further shows an embodiment of his invention in Fig. 3, where within the communication paths between the host device and the storage device lies a RAID server (storage area network inter-fabric services device) that the management data must pass through (col. 7, lines 44-47). Heil further discloses that storage devices 124, 126 do not communicate with each other (first and second independent switch fabrics) (col. 9, lines 28-29; claim 1 - a first interface adapted to transmit and receive management data from the first independent switching fabric; claim 1 - a second interface adapted to transmit and receive management data from the second independent switching fabric).

Heil discloses that the RAID server 134 of Fig. 3 includes a conventional processor 142 (inter-fabric adjunct processor) coupled to switched fabrics 130 and 132 (first and second independent switching fabrics).

Heil does not disclose that the inter-fabric processor is adapted to analyze and respond to management data from the first and second independent switching fabrics.

Heil does disclose, however, that the host device 104 of Fig. 1, which may include a processing unit 156 of Fig. 4, initiates a data access request for a selected storage device 106 by issuing a message packet that is directed to the selected storage device 106 through the switched fabric 102, wherein the switched fabric 102 receives the message packet and determines therefrom the selected storage device 106 to which the message packet is directed. Heil further discloses that the host device 104

Art Unit: 2662

and the selected storage device 106 transfer additional message packets containing data back and forth as necessary (analyze and respond to management data)(col. 6, lines 57-67, col. 7, line 1; claim 1 - an inter-fabric adjunct processor coupled to a said first interface and said second interface, said inter-fabric adjunct processor adapted to analyze and respond to management data from the first and second independent switching fabrics).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify RAID server of Heil to include a processor that in conjunction with independent switched fabrics, transmit and receive message packets as also taught by Heil to establish a data transfer path between the host device 104 and the selected storage device 106 of Fig. 1 (col. 6, lines 63-65). One skilled in the art would have been motivated to combine the teachings of Heil to generate the claimed invention with a reasonable expectation of success.

5. Regarding claim 5,

Heil discloses a system that covers all the limitations of the parent claim.

Heil discloses that the storage device 106 of Fig. 2 may interface to a bridge to a Fibre Channel SAN (col. 5, lines 64-67; claim 5 - the first and second switching fabrics operate in a Fibre Channel storage area network).

6. Regarding claim 6,

Heil discloses a system that covers all the limitations of the parent claim.

Heil discloses that the host device 104 (Fig. 2) and the selected storage device 106 transfer additional message packets through the data transfer path (in-band) (col. 6, line 66- 67, col. 7, lines 1-2; claim 6 - each of said first and second interfaces are either of in-band or out-of-band).

7. Regarding claim 9,

Heil discloses that switch 188 of Fig. 5 may be used for the switched fabrics of 138 and 140 (Fig. 3) and figure 3 shows that switched fabrics 138 and 140 are coupled to RAID Server 134 (coupled to said inter-fabric services device) (col. 8, lines 32-34). Heil further discloses that the central processing unit 194 (first and second inter-fabric services agent) controls the functions of the switch 188 (col. 8, lines 42-44; claim 9 - a first inter-fabric services agent coupled to said inter-fabric services device and operating on a first switching element in the first switching fabric, said first inter-fabric services agent adapted to communicate with said inter-fabric services device; claim 9 - a second inter-fabric services agent coupled to said inter-fabric services device and operating on a second switching element in the second switching fabric, said second inter-fabric services agent adapted to communicate with said inter-fabric services device).

Heil shows in Fig. 3 a RAID server 134 (inter-fabric services device) coupled to switched fabric 138 and switched fabric 140. Heil further discloses that storage devices

124, 126, connected to switched fabric 138, 140, respectively, do not communicate with each other (first and second independent switch fabrics) (col. 9, lines 28-29).

Heil does not disclose that the inter-fabric services device are adapted to logically manage the first and second independent switching fabrics as a single entity.

Heil does disclose, however, that the host device 104 of Fig. 1 initiates a data access request for a selected storage device 106 by issuing a message packet that is directed to the selected storage device 106 through the switched fabric 102, wherein the switched fabric 102 receives the message packet and determines therefrom the selected storage device 106 to which the message packet is directed. Heil further discloses that the host device 104 and the selected storage device 106 transfer additional message packets containing data back and forth as necessary (logically manage). Heil further discloses that host devices 114 of Fig. 3 are similar to the host device 104 (Fig. 2), except that the host devices 114 are physically separated from the switched fabrics 138 and 140 (logically manage the first and second independent switching fabrics as a single entity)(col. 6, lines 57-67, col. 7, line 1; claim 9 - the inter-fabric services device are adapted to logically manage the first and second independent switching fabrics as a single entity).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify RAID server of Heil to have the capability of logically managing the first and second independent switching fabrics 138 and 140 of Fig. 3 as a single entity as also taught by Heil to establish a data transfer path between the host device 104 and the selected storage device 106 of Fig. 1(col. 6, lines 63-65).

One skilled in the art would have been motivated to combine the teachings of Heil to generate the claimed invention with a reasonable expectation of success.

8. Regarding claim 10,

Heil discloses a system that covers all the limitations of the parent claim.

Heil does not show a second inter-fabric services device coupled to the first switching fabric and the second switching fabric, said inter-fabric services device adapted to provide a redundant inter-fabric service link.

Heil does show, however, in Fig. 10, a dual port drive, which enables redundant fail-over paths to the data. That is, each storage device 264 is connected to the switch 262 by two redundant connection links 268 (col. 11, lines 50-53; claim 10 - a second inter-fabric services device coupled to the first switching fabric and the second switching fabric, said second inter-fabric services device adapted to provide a redundant inter-fabric service link).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the interface between RAID server 134 (Fig. 3) and switched fabrics 138 and 140 as taught by Heil to include a redundant link such as ones linking storage device to a switch as also taught by Heil so that if one of the communication links fails, then the other communication link can be used (col. 11, lines 54-57). One skilled in the art would have been motivated to combine the teachings of Heil to generate the claimed invention with a reasonable expectation of success.

9. Regarding claim 11,

Heil discloses a system that covers all the limitations of the parent claim.

Heil does not disclose that the inter-fabric device and said first and second inter-fabric services agents communicate and register in a unique protocol.

Heil does, however, disclose that when the computer industry migrates to a different shared bus architecture, every device that connects to the shared bus must be redesigned with a new protocol (col. 1, lines 53-57; claim 11 - inter-fabric device and said first and second inter-fabric services agents communicate and register in a unique protocol).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the interface between the inter-fabric services device and first and second inter-fabric services agents as taught by Heil to have a new protocol (unique protocol) as also disclosed by Heil to communicate with the new speeds, bandwidths, or architecture (col. 1, lines 56-57). One skilled in the art would have been motivated to combine the teachings of Heil to generate the claimed invention with a reasonable expectation of success.

10. Regarding claim 12,

Heil discloses a system that covers all the limitations of the parent claim.

Heil shows in Fig. 3, a RAID server 134 connected to storage servers 130 and 132 and a shared-bus-to-switched-fabric bridge 150 (first interface and second interface) to link the shared bus 146 to the switched fabrics 138 and 140 (col. 7, lines 35-37, 52-56). Heil discloses that a communication channel is established for the transfer of message packets containing data access requests (transmit and receive management data) between host device and the storage devices (col. 6, lines 7-9). Heil further shows an embodiment of his invention in Fig. 3, where within the communication paths between the host device and the storage device lies a RAID server (storage area network inter-fabric services device) that the management data must pass through (col. 7, lines 44-47). Heil further discloses that storage devices 124, 126 do not communicate with each other (first and second independent switch fabrics) (col. 9, lines 28-29; claim 12 - a first interface adapted to transmit and receive management data from the first independent switching fabric; claim 12 - a second interface adapted to transmit and receive management data from the second independent switching fabric).

Heil discloses that the RAID server 134 of Fig. 3 includes a conventional processor 142 (inter-fabric adjunct processor) coupled to switched fabrics 130 and 132 (first and second independent switching fabrics).

Heil does not disclose that the inter-fabric processor is adapted to analyze and respond to management data from the first and second independent switching fabrics.

Heil does disclose, however, that the host device 104 of Fig. 1, which may include a processing unit 156 of Fig. 4, initiates a data access request for a selected storage device 106 by issuing a message packet that is directed to the selected storage

device 106 through the switched fabric 102, wherein the switched fabric 102 receives the message packet and determines therefrom the selected storage device 106 to which the message packet is directed. Heil further discloses that the host device 104 and the selected storage device 106 transfer additional message packets containing data back and forth as necessary (analyze and respond to management data)(col. 6, lines 57-67, col. 7, line 1; claim 12 - an inter-fabric adjunct processor coupled to said first interface and said second interface, said inter-fabric adjunct processor adapted to analyze and respond to management data from the first and second independent switching fabrics).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify RAID server of Heil to include a processor that in conjunction with independent switched fabrics, transmit and receive message packets as also taught by Heil to establish a data transfer path between the host device 104 and the selected storage device 106 of Fig. 1 (col. 6, lines 63-65). One skilled in the art would have been motivated to combine the teachings of Heil to generate the claimed invention with a reasonable expectation of success.

11. Regarding claim 16,

Heil discloses a system that covers all the limitations of the parent claim.

Heil discloses that the host device 104 (Fig. 2) and the selected storage device 106 transfer additional message packets through the data transfer path (in-band) (col.

Art Unit: 2662

16, line 66- 67, col. 7, lines 1-2; claim 16 - each of said first and second interfaces are either of in-band or out-of-band).

12. Regarding claim 19,

Heil shows in Fig. 3, a RAID server 134 connected to storage servers 130 and 132 and a shared-bus-to-switched-fabric bridge 150 (first interface and second interface) to link (inter-fabric service link) the shared bus 146 to the switched fabrics 138 and 140 (col. 7, lines 35-37, 52-56). Heil discloses that a communication channel is established for the transfer of message packets containing data access requests (receiving management data at the first and second interface) between host device and the storage devices (col. 6, lines 7-9). Heil further discloses that the host device 104 (Fig. 2) and the selected storage device 106 transfer additional message packets containing data back and forth as necessary (analyze the management data; coordinating the management of first and second switching fabrics)(col. 6, lines 66-67; col. 7, line 1; claim 19 - receiving management data at the first interface of the inter-fabric service link from at least one switching element in the first switching fabric; claim 19 - receiving management data at the second interface of the inter-fabric service link from at least one element in the second switching fabric).

Heil does not disclose analyzing the management data from the at least one element in the first switching fabric and the at least one element in the second switching fabric and coordinating the management of the first and second switching fabrics within the inter-fabric service link.

Heil does disclose, however, that the host device 104 of Fig. 1, which may include a processing unit 156 of Fig. 4, initiates a data access request for a selected storage device 106 by issuing a message packet that is directed to the selected storage device 106 through the switched fabric 102, wherein the switched fabric 102 receives the message packet and determines therefrom the selected storage device 106 to which the message packet is directed. Heil further discloses that the host device 104 and the selected storage device 106 transfer additional message packets containing data back and forth as necessary (analyzing the management data and coordinating the management of the first and second switching fabrics)(col. 6, lines 57-67, col. 7, line 1; claim 19 - analyzing the management data from the at least one element in the first switching fabric and the at least one element in the second switching fabric; claim 19 - and coordinating the management of the first and second switching fabrics within the inter-fabric service link).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify RAID server of Heil to include a processor that in conjunction with switched fabrics, analyze management data and coordinate management of switched fabrics as also taught by Heil to establish a data transfer path between the host device 104 and the selected storage device 106 of Fig. 1 (col. 6, lines 63-65). One skilled in the art would have been motivated to combine the teachings of Heil to generate the claimed invention with a reasonable expectation of success.

13. Regarding claim 24,

Heil discloses a method that covers all the limitations of the parent claim.

Heil discloses that the storage device 106 of Fig. 2 may interface to a bridge to a Fibre Channel SAN (col. 5, lines 64-67; claim 24 - the first and second switching fabrics operate in a Fibre Channel storage area network).

14. Regarding claim 27,

Heil shows in Fig. 3, a RAID server 134 (inter-fabric service device) connected to storage servers 130 and 132 and a shared-bus-to-switched-fabric bridge 150 to link (inter-fabric service link) the shared bus 146 to the switched fabrics 138 and 140 (col. 7, lines 35-37, 52-56). Heil discloses that a communication channel is established for the transfer of message packets containing data access requests (means for receiving and transmitting management data) between host device and the storage devices (col. 6, lines 7-9). Heil further shows an embodiment of his invention in Fig. 3, where within the communication paths between the host device and the storage device lies a RAID server that the management data must pass through (col. 7, lines 44-47; claim 27 – means for receiving and transmitting management data between the first switching fabric and an inter-fabric service link; claim 27 - means for receiving and transmitting management data between a second switching fabric and the inter-fabric service link).

Heil does not disclose means for processing the management data from the first and second switching fabrics or the means for coordinating the management of the first and second switching fabrics.

Heil does disclose, however, that the host device 104 of Fig. 1, which may include a processing unit 156 of Fig. 4, initiates a data access request for a selected storage device 106 by issuing a message packet that is directed to the selected storage device 106 through the switched fabric 102, wherein the switched fabric 102 receives the message packet and determines therefrom the selected storage device 106 to which the message packet is directed. Heil further discloses that the host device 104 and the selected storage device 106 transfer additional message packets containing data back and forth as necessary (means for processing management data and means for coordinating management)(col. 6, lines 57-67, col. 7, line 1; claim 27 - means for processing the management data from the first and second switching fabrics; claim 27 - and means for coordinating the management of the first and second switching fabrics).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify RAID server of Heil to include a processor that in conjunction with switched fabrics, that contains means capable of processing the management data and means for coordinating the management of switching fabrics as also taught by Heil to establish a data transfer path between the host device 104 and the selected storage device 106 of Fig. 1 (col. 6, lines 63-65). One skilled in the art would have been motivated to combine the teachings of Heil to generate the claimed invention with a reasonable expectation of success.

15. Regarding claim 31,

Heil discloses a system that covers all the limitations of the parent claim.

Heil discloses that the storage device 106 of Fig. 2 may interface to a bridge to a Fibre Channel SAN (col. 5, lines 64-67; claim 31 - the first and second switching fabrics operate in a Fibre Channel storage area network).

16. Regarding claim 32,

Heil shows in Fig. 3, a RAID server 134 connected to storage servers 130 and 132 and a shared-bus-to-switched-fabric bridge 150 (first interface and second interface) to link the shared bus 146 to the switched fabrics 138 and 140 (col. 7, lines 35-37, 52-56). Heil discloses that a communication channel is established for the transfer of message packets containing data access requests (transmit and receive management data) between host device and the storage devices (col. 6, lines 7-9). Heil further shows an embodiment of his invention in Fig. 3, where within the communication paths between the host device and the storage device lies a RAID server (storage area network inter-fabric services device) that the management data must pass through (col. 7, lines 44-47). Heil further discloses that storage devices 124, 126 do not communicate with each other (first and second independent switch fabrics) (col. 9, lines 28-29; claim 32 - a first independent switching fabric including at least one switching element; claim 32 - a second independent switching fabric including at least one switching element; claim 32 - a first interface adapted to transmit and receive management data from said first independent switching fabric; claim 32 - a second

interface adapted to transmit and receive management data from said second independent switching fabric).

Heil discloses that the RAID server 134 of Fig. 3 includes a conventional processor 142 (inter-fabric adjunct processor) coupled to switched fabrics 130 and 132 (first and second independent switching fabrics).

Heil does not disclose that the inter-fabric processor is adapted to analyze and respond to management data from the first and second independent switching fabrics.

Heil does disclose, however, that the host device 104 of Fig. 1, which may include a processing unit 156 of Fig. 4, initiates a data access request for a selected storage device 106 by issuing a message packet that is directed to the selected storage device 106 through the switched fabric 102, wherein the switched fabric 102 receives the message packet and determines therefrom the selected storage device 106 to which the message packet is directed. Heil further discloses that the host device 104 and the selected storage device 106 transfer additional message packets containing data back and forth as necessary (analyze and respond to management data)(col. 6, lines 57-67, col. 7, line 1; claim 32 - an inter-fabric adjunct processor coupled to a said first interface and said second interface, said inter-fabric adjunct processor adapted to analyze and respond to management data from said first and second independent switching fabrics.).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify RAID server of Heil to include a processor that in conjunction with independent switched fabrics, analyze and respond to management

data from first and second independent switched fabrics as also taught by Heil to establish a data transfer path between the host device 104 and the selected storage device 106 of Fig. 1 (col. 6, lines 63-65). One skilled in the art would have been motivated to combine the teachings of Heil to generate the claimed invention with a reasonable expectation of success.

17. Regarding claim 36,

Heil discloses a system that covers all the limitations of the parent claim.

Heil discloses that the storage device 106 of Fig. 2 may interface to a bridge to a Fibre Channel SAN (col. 5, lines 64-67; claim 36 - the first and second switching fabrics operate in a Fibre Channel storage area network).

18. Regarding claim 37,

Heil discloses a system that covers all the limitations of the parent claim.

Heil discloses that the host device 104 (Fig. 2) and the selected storage device 106 transfer additional message packets through the data transfer path (in-band) (col. 6, line 66- 67, col. 7, lines 1-2; claim 37 - each of said first and second interfaces are either of in-band or out-of-band).

Allowable Subject Matter

19. Claims 25 and 26 are allowed.
20. Claims 2-4, 7, 13-15, 17, 20-23, 28-30, 33-35, and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Sol whose telephone number is (571) 272-5949. The examiner can normally be reached on M-F 7:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anthony Sol
Examiner
Art Unit 2662

12/01/2005



CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600